

REMARKS

Request for Reconsideration, Informal Matters

5 The Official action of 13 February 2002 has been considered carefully. Reconsideration of the present application in view of the amendments above and discussion below is respectfully requested.

 Claims 34 and 44 have been amended to remove typographical remnants associated with the word "base", as suggested by the Examiner.

10 The Examiner's suggestion to change "communications handset" to - - communication handset - - is declined respectfully. The term "communications" is defined in The American Heritage Dictionary, Third Edition, as "technology employed in transmitting messages". The American Heritage Dictionary also indicates that the words "communication" and "communications" are attributives,
15 citing as examples: "communication systems" and "communications equipment". The Applicant submits therefore that the term "communications handset" recited in the claims is not improper.

 The claims have been amended throughout to change "course" to - - coarse - -, the meaning of which was clear in the original claims by virtue of the
20 recitation therein of limitations drawn to determining a "refined location" based on the coarse location. The Claims has also been amended grammatically and idiomatically, for example, the word "the" has been inserted before the limitation "base station information" and other claims terms where not inappropriate to make the claims read easier.

25 No new matter has been added.

 The foregoing amendments should be entered since they place the claims in condition for allowance or in better form for consideration on appeal.

 Claims 34-55 are pending.

Response to Objections Under 35 USC 112, 2nd para.

Claims 34 and 36-55 stand rejected under 35 U.S.C. 112, 2nd para.
allegedly for failure to provide proper antecedent bases for limitations therein.

Claim 34 has been amended in line 5 to recite the "cellular communication base station" thus corresponding more completely to the antecedent basis provided therefore in line 3. It is believed however that the those skilled in the art will unmistakably understand that "the base station" limitation in the original claims refers to the antecedent "cellular communication base station" in this and the other claims.

In Claim 34, the Examiner's recommendation to amend the claims to recite "a base station location information" and "a base station cellular area information" has as its only basis an idiomatic preference of the Examiner, which the Applicants respectfully decline to adopt. The original claim recitations clearly define and provide proper antecedent bases for the corresponding limitations.

Claim 36 has been amended to recite "the mobile wireless communication handset", the "cellular communication base station", the "base station cellular area information", "the bearing and the bearing angular width information" as recommended. The Examiner's suggestion to amend Claim 36 to recite "a bearing angular width information" has as its sole basis the Examiner's idiomatic preference, which the Applicants respectfully decline to adopt.

Claims 38-55 have been amended accordingly to comply more full with the antecedent bases provided therefore, although it is submitted that those skilled in the art would have understood clearly and unmistakably the antecedent bases provided in the original claims.

The claims as amended are believed to read easier. No new issues are raised by said amendments.

Allowability of Claims Over Fernandez & Schuchman

Claims 34-55 stand rejected under 35 U.S.C. 103 as being unpatentable over US 6,289,280 (Fernandez) in view of US 6,111,538 (Schuchman).

5 Contrary to the Examiner's assertion, neither Fernandez nor Schuchman disclose or suggest the limitations of the claimed inventions for the reasons discussed more fully below.

10 Fernandez discloses a GPS/terrestrial hybrid cellular phone location scheme based upon the solution of a system of linear equations, including an altitude equation, a satellite measurement equation, a time aiding equation, and a terrestrial measurement equation. Fernandez, col. 6, lines 45-56. In Fernandez, the altitude and satellite equations are linearized around an initial estimated location of the cellular phone. Fernandez discloses several examples of the initial estimated location, including the use of the sector or location of a nearby terrestrial transceiver.
15 Fernandez, col. 6, lines 59 - col. 7, line 6.

Schuchman discloses a system of terrestrial navigation beacons, which may be co-located with cellular bases stations, wherein the navigation beacons transmit direct or chirped spread spectrum signals having PN codes, the timing and synchronization of which are slaved to the Global Positioning System (GPS), for use in
20 determining the position of mobile terminals. The positioning scheme of Schuchman is based upon triangulation. Particularly, in Schuchman, a 2-D position solution requires pseudorange measurements from 3 navigation beacons, and a 3-D position solution requires pseudorange measurements from 4 navigation beacons, similar to the GPS navigation scheme. Schuchman, col. 7, lines 36-45.

25 Regarding independent Claim 34, contrary to the Examiner's contentions, neither Fernandez nor Schuchman disclose or suggest a method in a mobile wireless communications handset comprising

... receiving base station location information of a cellular communication base station;

receiving base station cellular area information for the cellular communication base station for which the base station location information is received;

5 determining a coarse location of the mobile wireless communications handset based on the base station location information and on the cellular area information.

Regarding independent Claim 47, neither Fernandez nor Schuchman disclose or suggest a method in a cellular communication system, comprising:

10 ... transmitting base station location information from at least one base station;

transmitting a cellular area of the at least one cellular base station for which location information is transmitted;

15 transmitting bearing information of the base station.

The Examiner's assertion that Fernandez receives and transmits base station distance and cellular area information is erroneous. Fernandez discloses using base station position as an initial location estimation for linearizing a system of equations, but Fernandez does not "... determining a coarse location of the mobile wireless communications handset based on the base station location information and on the cellular area information" as recited in Claim 34. Schuchman computes positions based upon at least 3 pseudorange measurements from 3 navigation beacons and based upon other information provided by the navigation beacon signals. Schuchman, col. 7, lines 36-45.

25 Claim 34 and the claims that depend therefrom are therefore patentably distinguished over Fernandez and Schuchman and in condition for allowance.

Regarding independent Claim 44, contrary to the Examiner's assertions, neither Fernandez nor Schuchman disclose or suggest a method in a mobile wireless communications handset, comprising

30 ... receiving bearing information from a plurality of at least two base stations,

determining a coarse location of the mobile wireless communications handset based on the bearing information;

determining a refined location of the mobile wireless communication handset based on the coarse location.

Regarding independent Claim 54, Fernandez and Schuchman fail to disclose or suggest a method in a cellular communication device comprising, the method comprising:

... receiving base station location information for at least one base station;
receiving a cellular area information for the base station for which base station location information is received;
receiving bearing information of the base station for which base station location information and cellular area information are received.

The Examiner's reference to the passages of Fernandez and Schuchman do not support a prima facie case of obviousness. Neither reference discloses or suggests determining coarse location based upon "bearing information". Claim 44 and the claims that depend therefrom are therefore patentably distinguished over Fernandez and Schuchman and are in condition for allowance.

Regarding Claims 36 & 45, contrary to the Examiner's allegations, neither Fernandez nor Schuchman teach reducing "... a GPS search space with the coarse location when determining the GPS based location" As noted above, Fernandez uses an initial estimated location fix to linearize GPS satellite and altitude measurements. Schuchman is a terrestrial navigation system, not GPS.

Regarding Claims 37 & 40, contrary to the Examiner's allegations, neither Fernandez nor Schuchman disclose or suggest "... determining the coarse location of the mobile wireless communications handset based on the base station location information, the base station cellular area information, the bearing and the bearing angular width information." Regarding Claims 46, Fernandez and Schuchman also fail to disclose or suggest "... determining the coarse location of the mobile wireless communications handset based on the base station location, on the cellular area information, and the bearing information."

Regarding Claim 38, contrary to the Examiner's assertions, neither Fernandez nor Schuchman disclose or suggest "... measuring power of a signal transmitted by the cellular communication base station, determining the coarse location of the mobile wireless communications handset based on the base station location information, the base station cellular area information, the bearing and the bearing angular width information, and the power measurement."

Regarding Claim 41, Fernandez and Schuchman also fail to disclose or suggest "... measuring power of a signal transmitted by the cellular communication base station, determining the coarse location of the mobile wireless communications handset based on the base station location information, the base station cellular area information, the bearing information, and the power measurement."

Regarding Claim 43, Fernandez and Schuchman also fail to disclose or suggest "... measuring power of a signal transmitted by the cellular communication base station, determining the coarse location of the mobile wireless communications handset based on the base station location information, the base station cellular area information, and the power measurement."

Regarding Claim 48, Fernandez and Schuchman also fails to disclose or suggest "... determining a coarse location of a mobile wireless communication device in the network based upon the cellular location information and the cellular area and the bearing information of the corresponding cellular base station."

Regarding Claims 49 & 50, Fernandez and Schuchman also fail to disclose or suggest "... transmitting bearing angular width information for the cellular base station" and "... determining the coarse location of the mobile wireless communication device in the network based upon the cellular location information, cellular area of the corresponding base station, and the bearing and the bearing angular width information."

Regarding Claims 52, Fernandez and Schuchman also fail to disclose or suggest "... transmitting the base station location information, the cellular area, and the bearing information in a Provide Base Station Almanac Message."

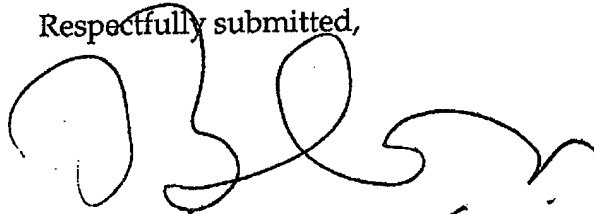
Regarding Claims 53, Fernandez and Schuchman also fail to disclose or suggest "... transmitting the base station location information, the cellular area, and the bearing information in a common message."

Regarding Claims 55, Fernandez and Schuchman also fail to disclose or suggest "... receiving the base station location information, the cellular area information, and the bearing information in a common message."

In view of the discussion and any amendments above, it is submitted that the pending claims are in condition for allowance. Kindly withdraw any rejections and objections and allow the claims to issue as a United States Patent without further delay.

A telephone interview with the Examiner is requested upon the Examiner's careful review of the present response, prior to preparation of an official action in reply thereto. Please contact the undersigned at the telephone number below.

Respectfully submitted,



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